

REMARKS

In the Office Action of April 27, 2006, claim 1 stands rejected under 35 U.S.C. §102(e), as being anticipated by U.S. Patent No. 6,955,425 to Childs et al. (the “Childs reference”). Claims 2-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Childs reference in view of Japanese Patent No. 2001-1328279 to Tsukada (the “Tsukada reference”) and further in view of U.S. Patent No. 6,164,766 to Erickson (the “Erickson reference”).

In response to the Office Action, Applicant has amended claims 1-5, 12-15 and 19-20 to clarify the alignment of the partition wall found in the plurality of the ink chamber rooms of the present invention. For example, independent claims 1, 19 and 20 have been amended in several ways to define the alignment of components relative to direction in which the recording medium is fed (i.e., the first direction). First, claims 1, 19 and 20 now recite that the ink storing chamber is oriented length wise in the first direction, which is the same direction the recording medium is fed. Stated otherwise, the narrow dimension of the chamber is parallel to the first direction. Support for this element is found, inter alia, in Figs. 1 and 2A, and in the specification at page 12, paragraph [0053] to page 13, paragraph [0055] and page 14, paragraph [0058] to page 16, paragraph [0063]. Second, claims 1, 19 and 20 now recite that the ink storing chamber has top and bottom inner surfaces. Support for this element is found, inter alia, in Figs. 3A to 8A each of which show a chamber with top and bottom inner surfaces. Third, claims 1, 19 and 20 now recite that “the at least one wall” extend vertically from the bottom inner surface towards the top inner surface along the first direction. Support for this element is found, inter alia, in Figs. 3A to 8A. Support for first and second rooms in claims 1, 19 and 20 are also found in Figs. 3A to 8A and in the specification page 18, paragraph [0072]. Support for cross-sectional

areas are found, inter alia, in Figs. 3A, 4A, 5A, 6A, 7A, and 8A and in the specification page 22, paragraph [0080]. Applicant believes that these amendments clarify the directional orientation of the present invention to clearly distinguish the present invention from the Childs, Tsukada and Erickson references.

**Rejections based on the Childs Reference (U.S. Patent No. 6,955,425)**

Applicant respectfully submit that Childs does not anticipate claim 1 nor render obvious, claims 2-20 when combined with the above-cited secondary references. Childs discloses a print cartridge 40 separated into two chambers (air-fluid separator 44 and free fluid chamber 48). Chambers 44 and 48 are aligned in a direction parallel to the directional arrows 88 shown in Figure 1 of Childs. This direction is the axis that the cartridge reciprocates while inkjet printing. See column 3, lines 35-40 of Childs. In the present invention, the direction the cartridge reciprocates is identified as the second direction. The partition wall identified as the internal wall structure 122A in Figure 6 of Childs is aligned in a direction parallel to the reciprocating direction. See Figures 1, 3, and 6 of Childs. Stated otherwise, wall structure 122A of Childs is aligned in the direction equivalent to the second direction of the present invention.

On the other hand, claims 1, 19, and 20 require the cartridge to be separated by a wall that is in the first direction (i.e., perpendicular to the reciprocating direction). Stated otherwise, the present invention as claimed, requires the wall dividing the ink storing chamber to be oriented perpendicular to the wall disclosed in Childs. The wall of Childs extends in the direction equivalent to the applicant's second direction, which claim 1, 19, and 20 require the wall to extend in the first direction, which is perpendicular to the second direction.

The wall alignment of the present invention provides a distinct advantage over an

ink storing chamber having a wall extending in the second direction such as disclosed in Childs.

The alignment of the wall of the present invention results in less air being entrained in the ink during printing. As a result, printing efficiency and quality increase when compared to inkjet printer disclosed in Childs.

First, when the partition wall is aligned in a direction parallel to the reciprocating direction as in Childs (i.e., applicant's second direction), the depth (or width) of the chambers is much smaller in the present invention. The depth (width) of the chambers is the space between the partitioning inner wall, identified as 36 in Figure 1 and the inner surface of the outer wall of the cartridge. However, with the prior art as shown in Childs, when the partition wall is parallel to the reciprocating direction, the entire space between the two outer walls of the cartridge becomes the equivalent of the depth in the present invention. Applicant has discovered that because there is more depth (or more space for the ink to move back and force), the ink is more easily entrained with air due to the ink moving back and force in the reciprocating direction (i.e., applicants second direction). Air becoming entrained in the ink causes the print quality to deteriorate.

Applicant has found that when the partition wall is aligned perpendicular to the second direction (i.e., the reciprocating direction), the above mentioned problem associated with entrained air is dramatically reduced. As a result, Applicant claimed inkjet printers do not exhibit reduced print quality due to air being entrained in the ink.

Applicant also submits that nothing in Childs or the secondary references teach or suggest aligning a partition wall in the first direction. Accordingly, claim 1 is not anticipated by Childs and claims 2-20 are not rendered obvious by the combination of Childs and the secondary references.

It is respectfully submitted that all of the presently pending claims are in immediate condition for allowance. The Examiner is respectfully requested to withdraw the rejections of the claims, to allow the claims, and to pass this application to early issue.

The fee for a three month extension of time is enclosed. Applicant does not believe that any other fees are due. However, if any additional fees are due, please charge such sums to our Deposit Account 50-1145.

Respectfully submitted,

  
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